# **EXHIBIT 2**

## **Condensed Transcript**

UNITED STATES DISTRICT COURT DISTRICT OF MASSACHUSETTS

IAN J. BROWN, JAMES BROWN AND BARBARA BROWN,

Plaintiffs.

VS

CIVIL ACTION NUMBER 04-11924-RGS

UNITED STATES OF AMERICA, VERIZON NEW ENGLAND, INC., AND BOSTON EDISON COMPANY D/B/A NSTAR ELECTRIC,

Defendants.

### **DEPOSITION OF**

## MURRAY BURNSTINE, P.E.

February 20, 2007 10:50 a.m.

Prince, Lobel, Glovsky & Tye, LLP 100 Cambridge Street Boston, Massachusetts

Laurie J. Driggers, Certified Court Reporter, Registered Professional Reporter, Certified Realtime Reporter, Certified LiveNote Reporter and Notary Public within and for the Commonwealth of Massachusetts.



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February 20, 2007

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	113		115
1	control. You can take your hand off and	1	Q. Okay.
2	it'll keep going.	2	A about even with his hip.
3	<ul> <li>Q. Do you know if that was added to</li> </ul>	3	Q. And when you say "leaning forward,"
4	this bike?	4	would he be leaning so his chest was on
5	A. When I inspected it, it it	5	the top of the gas tank or slightly off
6	returned to idle by itself when you let go	6	to the side of the motorcycle, to the
7	of it.	7	right side of the motorcycle?
8	<ul> <li>Q. So your opinion is that after</li> </ul>	8.	A. I don't know. I can't give you
9	losing directional control in the area of	9	that precision. I just assumed he was
10	the manhole cover, the motorcycle then	10	just leaning forward.
11	proceeded towards the guardrail on the	11	Q. Do you have an opinion as to where
12	right side of the road?	12	along the guardrail Brown made contact?
13	A. Correct.	13	A. You mean where
14	Q. And is it your opinion that Brown	14	Q. I'm sorry. It's a bad question.
15	was astride the motorcycle as it proceeded	1   15	Is it your opinion that he made
16	towards the right side of the road?	16	contact with the guardrail somewhere
17	A. Yes.	17	between Pole 37 and is this 38 or 39
18	Q. Okay. And you then indicated that	18	- between Pole 37 and the pole with the
19	his right hip and right shoulder made	19	25 mile an hour speed limit sign?
20	contact with the guardrail?	20	A. Yes.
21	A. Correct,	21	Q. And do you have an opinion as to
22	<ul> <li>Q. And is it your opinion that this</li> </ul>	22	where along that stretch he made contact?
23	occurred before Brown reached the area of	23	A. No. I – probably in the last 13
24	the utility pole?	24	feet, because there was none of his
	114		116
1	A. Yes.	١,	
2	Q. And by before, I guess that would	1 2	none of his clothing caught in the seams
3	be west of the utility pole; is that	3	of the guardrail. And I believe that each
4	right?	4	section is 13 feet long.
5	MS. JOHNSON:	5	Q. Do you have an opinion as to how
6	South-southwest.	6	long his body was in contact with the guardrail?
7	A. It would be south.	7	
8	South-southwest.	lé	A. No. Well, what do you mean "how
9	<ul> <li>Q. And when — is it your opinion that</li> </ul>	9	long?" You mean for the distance or the seconds?
10	when Brown made contact with the	10	
11	guardrail, he was astride the motorcycle	11	Q. No, I'm sоггу. It's a fair question.
12	at that time?	12	Time, in terms of time.
13	<ol> <li>For the hip, he probably he</li> </ol>	13	A I would say it would be to as
14	might have been, but for the shoulder he	14	A. I would say it would be less than     13 feet.
15	had to be horizontal. He had to be	15	Q. How about time?
16	preparing to push the motorcycle away to	16	
17	get his shoulder involved.	17	A. I can't tell. It just says, less than 13 feet.
18	<ul> <li>Q. So it's your opinion that he could</li> </ul>	18	
19	not have been on the motorcycle when his	19	Q. Did you see any evidence in the
20	shoulder made contact with the quardrail?	20	last 13 feet of the guardrail before Pole 16/37 that he was actually in contact with
21	A. He'd be on the motorcycle, but he	21	the guardrail?
22	would be leaning forward so that his	22	A. No. The evidence is on the
23	shoulder was down	23	clothing. I didn't see anything on the
24	(Witness indicating)	24	guardrail that - that indicated anything
			gamena mar indicated anything



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1 to do with this accident.	1 sp	eed. It just has to do with with
2 Q. When you went to the scene in A		e contact force. You know, if his
3 to perform your survey of the scene, d		the motorcycle is leaning over, then
you have photographs from the Bedfor		bu'd have to know the angle and what the
5 Police Department at that time?		and then can you calculate the force.
6 A. No.		t. Do you know the formula to
7 Q. Would making contact with the	1	etermine the force the contact force
8 guardrail reduce Mr. Brown's speed at	1	which you're referring? Is there a
9 which he was traveling?	4	rmula used in physics?
10 A. Yeah, of course.		Well, you have to draw what's
11 Q. Okay. Do you have an opinion as	4	alled, a free body diagram. Take into
12 to how much his speed was reduced by		count the weight of the rider, what
of his contact with the guardrail?	, , ,	ortion of his body is is involved, the
14 A. It would be insignificant.		eight of the motorcycle, the angle it's
<b>■</b>		•
	15 <b>at</b>	
,, ,	•	You know, I'd be surprised if you
object. I mean, you trying to slow it	<b>)</b>	for a person going 20 miles an hour,
down by the guy's sleeves — sleeve		it would slow him down even one mile
rubbing against a metal guardrail is no	L L	hour.
going to slow you down much. I don't	· ·	. And is it your opinion that the
think you could measure it if you had,		intact force bears no relationship to the
22 know, instruments.	· ·	eed of travel?
23 Q. So you couldn't calculate?		. No. They're two different things.
24 A. No. Well, you'd have to know the	24 <b>C</b>	. So the contact force of a person on
118		120
118 1 distance and the coefficient of friction.	1 a	
<b>f</b>		120 motorcycle that hits a guardrail at 80 iles an hour is the same as one who hits
1 distance and the coefficient of friction.	s 2 m	motorcycle that hits a guardrail at 80
distance and the coefficient of friction. Then you can calculate it. Whether he	s 2 m 3 at	motorcycle that hits a guardrail at 80 iles an hour is the same as one who hits
distance and the coefficient of friction. Then you can calculate it. Whether he' going uphill or downhill, but, I mean,	s 2 m 3 at 4 A	motorcycle that hits a guardrail at 80 iles an hour is the same as one who hits 20 miles an hour?  Yeah. The force would be the same.
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1	motorcycle continued ahead and down toward	1	guardrail on the police diagram.
2	its left where the police found it 89 feet	2	Q. Do you have an opinion, independent
3	away.	3	of what's in the police report, about the
4	Q. Now, when you say, Brown and the	4	location where Brown's direction of travel
5	motorcycle were traveling paratiel to the	5	changed to being towards the right towards
6	guardrail, at what point did they begin to	6	the guardrail, and then parallel to the
7	travel parallel to the guardrail?	7	guardrail?
8	<ul> <li>A. Well, according to the police, they</li> </ul>	8	A. No.
9	have located a mark.	وا	Q. Do you believe that -
10	Q. Well, what's your opinion about	10	A. It's just that it had to be before
11	MR. CHARNAS: Can he just	11	Pole 37.
12	finish his answer, please?	12	Q. Do you believe that Brown's
13	THE WITNESS: What?	13	direction of travel was constantly towards
14	MR. LEWIN: Well, it's a	14	the right after he lost directional
15	non-responsive.	15	control of the motorcycle to the point
16	MR. CHARNAS: Then you have	16	that he made contact with the guardrail?
17	the right to strike it later on, but he	17	A. That I don't know. It could've
18	has the right to finish his answer.	18	been wobbling all over the road. There's
19	<ul> <li>A. Well, I know he was parallel to the</li> </ul>	19	no you know, without any tire marks in
20	guardrail, because his clothing was melted	20	the road, I just it's just speculation
21	by contacting the guardrail in two two	21	what happened next,
22	areas.	22	Q. If he was wobbling, would you
23	<ul> <li>Q. All right. Well, you've told us</li> </ul>	23	expect there to be tire marks in the road?
24	that after he left after he lost	24	A. Not necessarily.
	122		- 124
1	directional control of the motorcycle, that	1	O If he were well-live at the control of
2	he then traveled towards the right towards	2	Q. If he were wobbling on the shoulder
3	the guardrail. Do you remember that	3	of the road, would you expect there to be marks on the dirt shoulder of the road?
4	testimony?	4	A Vee There would be 2 should?
5	A. Yes.	5	A. Yes. There would be S-shaped
6	Q. And while he was traveling towards	6	marks, showing the motorcycle going back and forth.
7	the right towards the guardrail	7	
8	guardrail, was he traveling parallel to	8	Q. And did you see any of those marks when you were at the scene?
9	the guardrail?	9	A. No.
10	<ol> <li>That question doesn't make sense.</li> </ol>	10	
11	He has to go travel to the right to get	11	Q. Have you ever seen any photographs of any such marks?
12	to the guardrail.	12	A. No.
13	Q. Okay. And then you testified at	13	
14	some later point he was traveling parallel	14	<ul> <li>Q. Do you have any idea how much force it would take to cause the marks that you</li> </ul>
15	to the guardrail; is that right?	15	observed on Province statistics the
16	A. Yes.	16	observed on Brown's clothing that you
17	Q. Now my question to you is, when did	17	believe were caused by the guardrait?  A. No.
18	ne – when did his direction of travel	18	
19	change towards being in a direction	19	Q. How do you have an opinion as to how those marks were caused?
20	towards the guardrail, to then being	20	A. Just the heat of friction –
21	parallel with the guardrail?	21	Q. Okay.
22	A. I guess where the police have what	22	
23	they call, first skid. They have a mark	23	
24	that looks like it's heading for the	24	surface. Unpainted, untarred, no sand and it could only be the beam and the
		24	and it could only be the ba-



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1	people in my field that the safest		·
2	location for a pole, if you got to have	1	A. I don't know either way.
3	them, is on the inside of a curve.	2	Q. What's the speed limit on that
4	Q. Understanding that it would be	3	curve?
5	safer to have the pole, in your opinion,	4	A. The sign says, 25.
6	on the inside of the curve, what is the	5	MR. CHARNAS: Off the
7	basis of your opinion that the pole was	6	record.
8	located on the wrong side of the road?	7	(Off the record)
وا	A. Because it's on the outside of the	8	BY MR. LEWIN:
10	curve.	9	Q. Other than your reference to common
11	Q. So is it your opinion that all	10	Kriowiedge, as you've stated it did you
12	utility poles must be located on the	11	review any other materials indicating or
13	inside of a curve?	12	supporting your opinion that the pole was
14		13	on the wrong side of the road, other than
15	A. No. They can be on the outside of	14	the article entitled "Design
16	the curve if they're 20 feet from the	15	Considerations," that we've been
117	road, you know, where nobody's going to	16	speaking about?
18	THE WIGHT. BUT THIS THING'S ON the Wrong	117	A. I don't know either way.
19	side of the road and it's nine inches from	18	Q. My question is, did you review any
20	the edge of the road.	19	other materials?
21	Q. Well, when you when you I	20	A. I don't remember.
22	think your report says the pole's 13	21	Q. But you've brought here today all
23	inches from the side of the road.	22	the articles you reviewed in reaching your
	A. It's what?	23	opinion; isn't that right?
24	Q. Thirteen inches?	24	A. For this case, correct.
	166	<b>—</b>	
1	A. Oh – you're correct.	1	168
2	Q. When you say, wrong side of the	1	Q. Are you aware of any publication
3	road, are you aware of any literature that	2	that states that it is impermissible to
4	states poles cannot be located within 13	3	locate a utility pole on the outside of a
5	inches on the outside of a curve?	4	curve of a road which has a speed limit
6	A. Just a rule of common sense.	5	of 25 miles an hour?
7	MR. CALLAHAN: Is that a	6	A. I can't imagine that kind of
8	no?	7	that kind of specification.
9	A. Pardon?	8	Q. So is your answer no?
10	MR. CALLAHAN: Is that a	9	A. I'm not aware of any.
11	Ves or a no? Can we get a	10	Q. Did you conduct any other analysis
12	yes or a no? Can we get an answer to the question?	11	upon which you based vour opinion that the
13		12	pole was on the wrong side of the road
14	A. I don't know of any written	13	other than reference to common sense or
15	standard that tells you 13 inches is no	14	common knowledge? I'm sorry.
16	good, but 14 inches is all right.	15	A. No. Well, I talked to a traffic
17	Q. Are you aware of any Massachusetts	16	engineer about it.
18	regulations in that respect?	17	Q. Well, I just asked you a minute ago
19	A. No. I'm not - I don't know either way.	18	if you had spoken to any person about the
20	O In fact on your	19	location of the utility pole -
21	Q. In fact, are you aware whether this	20	A. Oh, I
22	Pule, if terms of its distance from the	21	Q and you said, no.
23	edge of the pavement, was in violation of	22	A. — I discussed this case with a
24	ally law or regulation in the State of	23	friend of mine who's a a highway
- 4	Massach Reette 7	24	designer.

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	169		171
1	Q. Who's that?	1	this guardrail was to deflect vehicles
2	A. Murray Segal, S-E-G-A-L.	2	away from the pole?
3	Q. And what was your discussion with	3	A. Well, that should've been its
4	him?	4	purpose.
5	A. I just explained it, told him about	5	Q. What if the guardrail was installed
6	the case: pole 13 inches from the end of	f 6	to protect the fence, would that change
7	the pavement and on the wrong side of a	a   7	your opinion about the purpose of the
8	guardrail. And he said it sounded like a	8	guardrait?
9	real defect.	9	A. Well, it could it should've been
10	Q. What sounded like a real defect?	10	on the other side of the pole.
11	A. What's that?	11	Q. Do you know when the guardrail was
12	Q. What sounded like a real defect?	12	placed?
13	<ul> <li>A. The pole location and the guardrail</li> </ul>	13	A. I was told that there – there's no
14	orientation.	14	record of who installed the guardrail is
15	Q. So he said that the location of the	15	what Mr. Charnas told me.
16	guardrail behind the pole sounded like a	16	Q. Do you know when it was installed?
17	real defect?	17	A. No.
18	A. Correct.	18	Q. Do you know when the pole was
19	Q. Did he specifically say to you that	19	originally installed?
20	the location of the pole on the outside of	20	A. Yeah. 1916,
21	a curve was a defect?	21	Q. Do you know which was installed
22	<ol> <li>I don't think he said it was a</li> </ol>	22	first?
23	defect. He said it sounds like a	23	A. What?
24	dangerous scene.	24	Q. Do you know which was installed
	170		172
1	Q. Did he specifically say to you that	1	first?
2	the pole was improperly located on the	2	A. Oh, I think the the pole would
3	outside of the curve?	1 3	be installed first. Because that type of
4	A. I don't think so, I mean, there's	4	guardrail has only been around for 40
5	just some things, you know, like, one and	5	years.
б	one is two. You don't have to get an	6	Q. What materials did you review in
7	answer out of somebody.	7	reaching your opinion that the guardrail
8	Q. Did you tell him the speed limit of	8	is on the wrong side of the pole?
9	the road?	9	A. Again, one of those papers.
10	A. I don't remember.	10	Q. And just to speed things along, is
11	<ul> <li>Q. Did you tell him the radius of the</li> </ul>	11	it this paper, "Effects of Presence of
12	curve	12	Light Poles on Vehicle Impact of Roadside
L3	A. Yes.	13	Barriers?"
L <b>4</b>	Q. — on the road?	14	MR. CHARNAS: What page are
	A. Yes.	15	you on, Josh?
	(1 Algunia, al.,	1	MR. LEWIN: Page .4 of
15 16	Q. Now you also opine in your report	16	MILL FEATURE BROOK A VA
l 6 L 7	that the guardrail is on the wrong side of	17	his
. 6 . 7 . 8	that the guardrail is on the wrong side of the pole; is that – is that your opinion?		his
. 6 . 7 . 8 . 9	that the guardrail is on the wrong side of the pole; is that – is that your opinion?  A. Yes.	17	his (Witness viewing)
16 17 18 19	that the guardrail is on the wrong side of the pole; is that – is that your opinion?  A. Yes.  Q. What's the basis for that opinion?	17 18	his (Witness viewing)  A. It might have been, I'm not sure
16 17 .8 .9 !0	that the guardrail is on the wrong side of the pole; is that — is that your opinion?  A. Yes.  Q. What's the basis for that opinion?  A. The purpose of the guardrail is to	17 18 19	his (Witness viewing)  A. It might have been. I'm not sure. It could've been the U.S. Federal Highway
16 17 -8 .9 !0	that the guardrail is on the wrong side of the pole; is that — is that your opinion?  A. Yes.  Q. What's the basis for that opinion?  A. The purpose of the guardrail is to deflect vehicles away — away from the	17 18 19 20	his (Witness viewing)  A. It might have been. I'm not sure. It could've been the U.S. Federal Highway paper.
16 17 .8 .9 !0	that the guardrail is on the wrong side of the pole; is that — is that your opinion?  A. Yes.  Q. What's the basis for that opinion?  A. The purpose of the guardrail is to	17 18 19 20 21	his (Witness viewing)  A. It might have been. I'm not sure. It could've been the U.S. Federal Highway



Direct Dial: 617.557.0039
Toll Free: 866.814.0039
Toll Free Fax: 866.557.0041
www.jackdanielreporting.com

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		1	
	173		175
1	relative locations of the guardrail and	1	A. No.
2	the utility pole?	2	Q. Are you aware of any state laws or
3	A. No.	3	regulations with respect to the placement
4	Q. And, again, this article, "Effects	4	of guardrails in juxtaposition to a
5	of Presence of Light Poles on Vehicle	5	utility pole?
6	Impact of Roadside Barriers," was that	6	A. I I don't know of any written
7	something you already had in your files?	7	regulation, but, again, it's just common
8	Or did you obtain that to find support for	8	sense.
9	your opinion?	و	Q. And are you aware of whether that
10	A. I – I – I obtained it.	10	matter of common sense is published in any
11	<ul> <li>Q. To support your opinion in this</li> </ul>	11	peer-reviewed journals or articles?
12	case?	12	A. I believe these articles that I've
13	A. I guess so.	13	cited say that, what the purpose of the
14	Q. And where did you get it?	14	guardrail is. it's not to make sure you
15	A. Internet search engine.	15	slide into a pole.
16	Q. And did you read this entire	16	Q. Now you have also provided an
17	article prior to reaching your conclusions,	17	opinion in your report that Pole 37 was
18	or did you read it after you had reached	18	too close to the pavement; is that your
19	your conclusions?	19	opinion?
20	A. Prior.	20	A. Correct.
21	<ul> <li>Q. And did you consider its</li> </ul>	21	Q. On Hartwell Road, what distance
22	methodology and conclusions to be sound?	22	would not be too close to the pavement?
23	A. Yes.	23	A. Well, I just have to say, as far
24	<ul> <li>Q. And how is it that you say this</li> </ul>	24	as possible.
	174		176
1	article supports your conclusion that the	1	Q. Did you consult with anyone
2	guardrail's on the wrong side of the pole?	2	regarding the proximity of the pole to the
3	<ul> <li>A. I believe the article says the</li> </ul>	3	edge of the pavement in reaching your
4	purpose of the guardrail is to deflect	4	opinion?
5	vehicles away from poles or other	5	A. I don't recall.
6	obstacles.	6	<ul> <li>Q. What materials did you review with</li> </ul>
7	<ul> <li>Q. Do you consider Hartwell Road, in</li> </ul>	7	respect to your opinion that the pole was
8	the area of the accident, to be a	8	too close to the edge of the roadway?
9	low-volume road?	9	A. Just my common sense.
10	A. Well, compared to what? It's not	10	<ul> <li>Q. And again, you didn't review any</li> </ul>
11	it's not Route 128.	11	state rules or regulations or laws
12	Q. It's a small, rural road; is that	12	regarding the distance that is required to
13	right?	13	be maintained between the edge of the
14	A. Yeah.	14	pavement and the utility pole, did you?
15	Q. With one lane in each direction?	15	<ul> <li>A. Well, during the Harvard Study</li> </ul>
16	A. Yeah, I mean, they have when	16	there were - we found a big oak tree in
17	they have a traffic jam in the morning	17	Danvers that had been involved in about
18	when that people in the trailer park go	18	ten fatal accidents of cars running into
19	to work. You know, but I wouldn't	19	it. It was - it was half in the street,
20	consider it a major road. It is just a	20	this tree.
21 22	country road.	21	And we put a recommendation that
1//	Q. It's not an urban road?	22	the tree be removed. And we had to go to
	A 1 '		
23	A. No.	23	a hearing with the tree warden in front of
	A. No. Q. It's not a highway?	23 24	a hearing with the tree warden in front of the tree so that the tree could hear what



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	······································	.,	
	245		247
1	own if the if the front wheel gets	1	not that your opinion?
2	kпосked out of alignment. So it's not	2	A. I think it was at the moment of
3	like an automobile at all.	3	impact.
4	If it starts leaning from right to	4	Q. Okay. And at what point in time
5	left, that's called a roll. The	5	after the after he passed the manhole
6	motorcycle just goes where you don't want	6	cover did the motorcycle start to lean to
7	it to go. And it's – it takes a really	7	the right?
8	skilled rider to get it back on.	8	A. That I don't know.
9	Sometimes you have to speed up, sometime	s 9	Q. Okay. When Mr. Brown and the
10	you have to let go of the handlebars and	10	motorcycle were riding parallel to the
11	let the and and jerk the throttle.	11	guardrail, what position, in your opinion,
12	But it can take you by surprise, you know.	12	was the motorcycle in in terms of angle to
13	You're suddenly going where you don't want	13	the street?
14	to go.	14	A. When was that?
15	<ul> <li>Q. With reference to your report in</li> </ul>	15	Q. When Mr. Brown and the motorcycle
16	this case, did you form an opinion as to	16	were riding parallel to the guardrail
17	when Mr. – at what distance past the	177	along the the shoulder of the road,
18	manhole cover Mr. Brown lost directional	18	what position was the motorcycle in in
19	control of the motorcycle?	19	relation to the angle to the street?
20	<ol> <li>No. I don't have a distance,</li> </ol>	20	MR. CHARNAS: Objection.
21	except it was before Pole 37.	21	A. I think it was upright, if that's
22	Q. So sometime between the manhole	22	what you mean
23	cover and Pole 37, Mr. Brown lost	23	Q. Okay.
24	directional control of the motorcycle; is	24	A by angle. I don't think it was
	246	1	248
1	that	1	
2	A. Correct,	2	leaning at that point.
3	Q your opinion?	3	Q. So it's your I'm sorry. I
4	A. Yes.	4	didn't mean to cut you off.
5	<ul> <li>Q. And I think you indicated that it</li> </ul>	5	A. There's no need for it to lean
6	was your opinion that the motorcycle	6	there. He's just traveling, you know,
7	started to roll to the right; is that	7	with the handlebars straight ahead. He's
8	correct?	8	going parallel to the – to the guardrail.
9	<ul> <li>A. No. I said that at the — at the</li> </ul>	9	Q. Okay. So it's your opinion that
10	time of his head hitting the pole, if the	10	Mr. Brown was astride the motorcycle
11	motorcycle was rolled to the right, it	11	riding parallel to the guardrail along the
12	would explain how his head got hit and not	12	dirt shoulder of the road in an upright position on the motorcycle; is that
13	his shoulder or his legs or the	13	correct?
14	motorcycle. Because a motorcycle in that	14	A. Correct.
15	lean-to-the-right position, the operator's	15	Q. And for how long a distance is it
16	head is the farthest object to the right.	16	is it – strike that.
17	I can show you with this toy	17	Did you form an opinion as to what
18	motorcycle.	18	distance Mr. Brown traveled in that
19	(Witness indicating).	19	position?
20	If you lean to the right, your	20	A. I have some calculations that may
21	head's going to get hit and nothing else	21	refine what I testified to before. It's
22	Q. So at some point in time, it is	22	104 feet 2 inches from the center line of
	to an anima bount artifattie, it is		
23	your - your opinion that Mr. Brown's	23	the manhole to Pole 37. There a hands
	your your opinion that Mr. Brown's motorcycle leaned to the right or is it		the manhole to Pole 37. That's a hundred or something before. Going at 24 miles an



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Toll Free: 866.814.0039
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